MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2017/ 2018

BPO2064 PRODUCTION & OPERATIONS MANAGEMENT
(All sections / Groups)

16 MARCH 2018
9.00 a.m to 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This Question paper consists of 3 pages, excluding the cover page.

2. Answer **ANY FIVE OUT OF SIX** questions. All questions carry equal marks.

3. Answers should be written in the Answer Booklet provided.

4. The students are allowed to use non-programmable calculator

Answer ANY FIVE questions. All questions carry equal marks.

(5 x 20 = 100 marks)

Question 1

a. Explain FIVE (5) opportunities and FIVE (5) risks of globalisation.

(10 marks)

b. What are the three main operations strategies? Explain how these strategies are implemented in Air Asia.

(10 marks)

Question 2

a. Describe any FIVE (5) principles of TQM with examples.

(10 marks)

b. Telephone inquiries of WeBe customers are monitored daily at random. Incidents of incorrect information or other nonconformities (such as impoliteness to customers) are recorded. The data for last week follow:

Day	No. of nonconformities
1	24
2	32
3	30
4	28
5	29
6	31

i. Construct a 3σ c-chart of nonconformities

(7 marks)

ii. What does the control chart tell you about the WeBe operators?

(3 marks)

Question 3

a. The following table gives the demand for heart transplant surgery at Universiti Malay Hospital.

Year	1	2	3	4	5	6
Heart transplants	22	24	23	27	27	26

The director of medical services predicted 6 years ago that demand in year 1 would be 20 surgeries.

Continued..

    i.   Use exponential smoothing, first with a smoothing constant of 0.6 to develop forecasts for years 2 through 6.

(4 marks)

    ii.   Use a 3-year moving average method to forecast demand

(4 marks)

    iii.   With MAD as the criterion, which of the forecasting methods is best?

(2 marks)

b.   Successful product strategies require determining the best strategy for each product based on its position in its life cycle. With examples, explain the four phases of product life cycle and their corresponding strategies.

(10 marks)

Question 4

a.   Proton wants to develop a precedence diagram for a door component that requires a total time of 66 minutes as detailed below. It determines that there are 480 productive minutes of work available per day. Furthermore the production schedule requires that 40 units of the door components be completed as output from the assembly line each day. Balance the assembly line, calculate its efficiency and balance delay.

(10 marks)

Task	Assembly time (min)	Job precedence
A	10	-
B	11	A
C	5	B
D	4	B
E	12	A
F	3	C, D
G	7	F
H	11	E
I	3	G, H

b.   Identify the two categories of aggregate planning strategies and explain the difference between them.

(10 marks)

Question 5

a.   Explain any two (2) sourcing strategies in supply chain management with examples.

(10 marks)

Continued..

b. Boreki Enterprise has the following 10 items in inventory. He asks you to divide these items into ABC classifications.

Item	Annual demand	Cost/unit
A2	3000	$50
B8	4000	12
C7	1500	45
D1	6000	10
E9	1000	20
F3	500	500
G2	300	1500
H2	600	20
I5	1750	10
J8	2500	5

i.   Develop an ABC classification system for the 10 items.

(8 marks)

ii.   How can Boreki use this information?

(2 marks)

Question 6

a. How are lean production and quality related? What is Lean Six Sigma?

(10 marks)

b. Given that all the jobs listed below must be machined first, then polished, determine a sequence that will minimise the time required to process all six jobs. Charts the schedule on a Gantt chart.

(10 marks)

Jobs	Machining	Polishing
A	5.0	4.0
B	7.0	3.0
C	3.0	2.0
D	2.0	1.0
E	2.0	3.0
F	6.0	5.0

END OF PAPER